

**ANTECEDENTS AND CONSEQUENCES OF WORK ENGAGEMENT:
A STUDY AMONG ENGINEERS IN THE ELECTRICAL AND
ELECTRONICS SECTOR IN PENANG**

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**Research report submitted in partial fulfillment of requirements for the
degree of Masters of Business Administration**

2009

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DECLARATION

I hereby declare that the project is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at USM or any other institutions.

(Signature)

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DATE : **JUNE 8, 2009**

DEDICATION

To all my family member my wife, Rohana Salleh and the three children Afiqah, Adham and Aisyah. Together, they have been my inspiration to reach for excellence.

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ABSTRAK

Kajian ini dijalankan untuk mengenalpasti sebab dan akibat penceburan dalam kerja (work engagement) di kalangan jurutera di dalam sektor pekilangan elektrik dan elektronik. Antara sebab penceburan dalam kerja ialah beban kerja dan sumber kerja. Pembolehubah untuk beban kerja ialah beban kuantitatif, beban emosi dan beban kognitif. Manakala sumber kerja adalah autonomi, sokongan penyelia, sokongan organisasi, keadilan distributif dan keadilan prosedur. Natijah akibat penceburan dalam kerja merangkumi kepuasan kerjaya, keinginan berhenti kerja, komitmen organisasi dan prestasi kerja. Sebanyak 178 set soal selidik telah dikutip dari responden terdiri dari jurutera yang bekerja dalam 20 kilang pembuatan elektrik dan elektronik di Pulau Pinang. Data yang dianalisa menunjukkan beban kuantitatif mempunyai perhubungan serapan (absorption). Beban kognitif dan beban emosi tidak mempunyai perkaitan langsung dengan semua dimensi penceburan dalam kerja. Kedua-dua sokongan penyelia dan keadilan distributif mempunyai perkaitan positif dengan semangat kerja (vigor). Disamping itu, sokongan organisasi mempunyai perkaitan positif dengan dedikasi dan keadilan prosedur pula mempunyai perkaitan positif dengan serapan. Dari segi natijah penceburan dalam kerja, dedikasi didapati mempunyai perkaitan positif dengan kepuasan kerjaya, komitmen organisasi dan prestasi kerja tetapi mempunyai perkaitan negatif dengan keinginan untuk berhenti kerja. Semangat kerja didapati mempunyai perkaitan positif dengan kedua-dua komitmen organisasi dan prestasi kerja. Akhir sekali, serapan didapati mempunyai perkaitan positif dengan keinginan untuk berhenti kerja, komitmen organisasi dan prestasi kerja.

ABSTRACT

This research studied the antecedents and consequences of work engagement among engineers in electrical and electronics manufacturing firms in Penang. The antecedents for work engagement were job demand and job resources. Job demand variables were quantitative demand, emotional demand and cognitive demand. Whereas job resources variables were job autonomy, perceived supervisory support and perceived organization support, distributive justice and procedural justice. The consequences of work engagement consist of work related outcomes, career satisfaction, turnover intention, organization commitment and task performance. A total of 178 sets of questionnaires were collected from the respondents who were engineers working in 20 electrical and electronics manufacturing firms in Penang. Data was subsequently analyzed show that quantitative demand has a positive relationship with absorption. Cognitive demand and emotional demand had no relationship with all dimensions of work engagement. Both perceived supervisory support (PSS) and distributive justice (DJ) were found to be positively related to vigor. Similarly, perceived organizational support (POS) was found to have a positive relationship with dedication whereas procedural justice (PJ) has a positive relationship with absorption. On the consequences of work engagement, dedication was found to be positively related to career satisfaction, organization commitment and task performance and negatively related to turnover intention. Vigor was found to be positively related to both organization commitment and task performance. Finally, absorption was found to be positively related to turnover intention, organization commitment and task performance.

Chapter 1

INTRODUCTION

1.1 Background

Work engagement remains a critical concern for organizations. Understanding work engagement is key to powerful employee retention, productivity, and profitability. Engineers in a manufacturing firms especially need to be engaged as they are the link between top management and co-worker. Chughtai and Buckley (2008), cited that the driving force behind the importance of work engagement is that it has positive consequences for the organization. For example, empirical research on work engagement reports that high levels of engagement lead to enhanced organizational commitment, increased job satisfaction, lower absenteeism and turnover rates, improved health and well being, more extra role behaviors, higher performance and a greater exhibition of personal initiative, proactive behavior and learning motivation (Schaufeli & Salanova, 2007). Thus investing in conditions, which foster work engagement among employees, is vital for the growth and profitability of organizations.

Furthermore the economic downturn recently has resulted into uncertainties among local and foreign firms in terms of downsizing and retrenchments. Much of the problem stems from Malaysia's especially Penang's heavy reliance on its electrical and electronics sector of 60% Malaysia total exports (Annual Report 2001, BNM). With lesser number of employees left in these manufacturing firms, work engagement is the key answer for the firms to sustain productivity, leading to greater profitability.

Therefore it is very important for manufacturing firms in Malaysia to emphasize on work engagement to increase the level of work engagement among their employees

especially the engineers. Engaged employees also outperformed the not engaged and actively disengaged employees in other divisions (Seijts, Gerard & Crim, 2006). It comes as no surprise, then, that engaged employees have been statistically linked with innovation events and better problem solving (Scarlett , 2009)

1.2 Problem Statement

Organization have traditionally relied upon financial measure to evaluate their performance, value and health. Metrics such as profitability, revenue and cash flow remains important financial indicators of effective performance. Human-oriented measures such as employee attitudes, traits and perceptions are also being recognize as important predictor of employee behavior and performance (Pfeffer, 1998). Chugthai and Buckely (2008) concluded that fostering work engagement is a highly viable organizational goal because of its positive impact on important organizational outcomes. Hence it is important to study work engagement, its predictors and the outcomes. To the researcher's knowledge there has been no published research on work engagement research in Malaysia. This is consistent with Saks (2006) that mentioned a limited research on employee engagement.

1.3 Research Objectives

This study has the following objectives:

- 1) To investigate the relationship between job demands (quantitative demand, emotional demand and cognitive demand), job resources (autonomy, organization and supervisor support, organizational distributive justice and procedural justice) and work engagement (vigor, dedication and absorption) among engineers in electronics firm in Penang.

- 2) To investigate the relationship between work engagement (vigor, dedication and absorption) and work outcomes (career satisfaction, turnover intention, organization commitment and task performance) among engineers in electronics firm in Penang.

1.4 Research Questions

Given that job demands and job resources do affect work engagement, the research questions are as follows:

- 1) What is the relationship between job demands (quantitative demand, emotional demand and cognitive demand), job resources (autonomy, organizational and supervisor support, organizational distributive justice and procedural justice) and work engagement (vigor, dedication, and absorption) among engineers in electronics firm in Penang?
- 2) What is the relationship between work engagement (vigor, dedication and absorption) and work outcomes (career satisfaction, turnover intention, organization commitment and task performance) among engineers in electronics firm in Penang.

1.5 Significance of the Study

This study is important because it will be able to link both work engagement antecedents (relating to job demands and resources) and work engagement outcomes (career satisfaction, turnover intention, organization commitment and task performance). The current study will be able to gauge the level of work engagement among the engineers in the electrical and electronic manufacturing firms in Penang. It is hoped that the findings from this study will be able to identify the relationships between job demand and job resources with work engagement. From the practical perspective, finding from this study will help employing organization in developing job resources and reducing job demand aimed at

increasing employees' work engagement. Furthermore, the finding from this study will be able to validate the positive effects of work engagement on work outcomes.

1.6 Definitions of Key Variables

The key variables used in the present study are defined as follows:

1.6.1 Work Engagement

Engagement is defined as a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption (Schaufeli, Salanova, Gonz lez-Roma', & Bakker, 2002). Work engagement consist of three dimension as define by Schaufeli et. al (2002). *Vigor* is characterized by high levels of energy and mental resilience while working, the willingness to invest effort in one's work, and persistence even in the face of difficulties. *Dedication* is characterized by a sense of significance, enthusiasm, inspiration, pride, and challenge. *Absorption* is characterized by being fully concentrated and deeply engrossed in one's work, whereby time passes quickly and one has difficulties with detaching oneself from work.

1.6.2 Job Demands

Schaufeli and Bakker(2004) defined job demands refer to physical, social, or organizational aspects of the job that require sustained physical and/or psychological effort on the part of the work and are therefore associated with certain physiological and psychological costs. May et. al (2004) cited that individuals use their *quantitative, emotional and cognitive* resources to bear on role-related task when they engage themselves at work.

1.6.3 Job Resources

Job resources defined to be the physical, psychological, social, or organizational aspects of the job that reduce job demands and the associated costs, help as functional in achieving work goals, or stimulate personal growth, learning and development (Bakker, Demerouti & Schaufeli., 2003).

1.6.4 Consequences of Work Engagement

This study adopts the definition of Zingesser (2004), *career satisfaction* is defined as the level of overall happiness experienced through one's choice of occupations. *Turnover intention* is defined as one's propensity to leave (Lyons, 1971). *Organization commitment* is defined as a "the relative strength on an individual's identification with involvement in an organization (Mowday, Porter & Steer, 1982). *Task performance* includes behaviors that contribute to the core transformation and maintenance activities in an organization, such as producing products, selling merchandise, acquiring inventory, managing subordinates, or delivering services (Motowidlo & Schmit, 1999).

Chapter 2

LITERATURE REVIEW

2.1 Introduction

This chapter discusses on past literature of work engagement, its antecedents and consequences. Theories that form the basis of work engagement are also discussed. From the review of literatures, the theoretical framework and hypotheses for this study are forwarded.

2.2 Work Engagement and its Dimensions

Research on work engagement has increased substantially in the past few years. An engaged employee is a person who is fully involved in, and enthusiastic about, his or her work. Engaged employees believe that they can make a difference in the organizations they work for. Confidence in the knowledge, skills, and abilities that people possess in both themselves and others is a powerful predictor of behavior and subsequent performance. The 2003 Towers Perrin Talent Report, defined engagement as involving both emotional and rational factors relating to work and the overall work experience. The emotional factors tie to people's personal satisfaction and the sense of inspiration and affirmation they get from their work and from being part of their organization. A key item here, for instance, is having a strong sense of personal accomplishment from one's job. The 2003 Towers Perrin Talent Report also stated that rational factors, by contrast, generally relate to the relationship between the individual and the broader organization. For instance, the extent to which employees understand their role, and their unit's role, relative to company objective.

Macey and Schneider (2008) stated that having an engaged employees maybe a key to competitive advantage in the world that is changing both in terms of work and the aging of workforce. According to Saks (2006) the evidence so far seems to support considerable engagement-related benefits for organizations. However, Saks (2006) stated that work engagement is still a new era of research. The existence of different definitions makes the state of knowledge of work engagement difficult to determine as each study examines work engagement under a different context. Saks (2006) argued that organizational commitment also differs from engagement in that it refers to a person's attitude and attachment towards their organization, whilst it could be argued that engagement is not merely an attitude; it is the degree to which an individual is attentive to their work and absorbed in the performance of their role. In addition, while organization citizenship behavior (OCB) involves voluntary and informal behaviors that can help co-workers and the organization, the focus of engagement is one's formal role performance rather than purely extra-role and voluntary behavior. Environmental factors include congruency between organizational and individual values, the quality of the workplace relationships, and work-life balance. Leadership engagement factors include vision and integrity. Job engagement factors include the meaningfulness of the job, it's level of challenge, and the amount of control the employee has on the job. Finally, individual factors related to engagement include resilience, locus of control, active coping style, self-esteem, neuroticism, and extraversion neuroticism, and extraversion (Wildermuth & Pauken, 2008).

One model of engagement comes from the 'burnout' literature, which describes job engagement as the positive antithesis of burnout, noting that burnout involves the erosion of engagement with one's job (Maslach, Schaufeli, & Leiter, 2001). According to Maslach et. al. (2001), six areas of work-life lead to either burnout or engagement: quantitative demand,

control, rewards and recognition, community and social support, perceived fairness and values. They argued that job engagement is associated with a sustainable quantitative demand, feelings of choice and control, appropriate recognition and reward, a supportive work community, fairness and justice, and meaningful and valued work. Like burnout, engagement is expected to mediate the link between these six work-life factors and various work outcomes. May, Gilson and Harter (2004), findings support Maslach et. al. (2001) notion of meaningful and valued work being associated with engagement, and therefore it is important to consider the concept of ‘meaning’.

Another alternative model on work engagement views engagement as a distinct construct (Schaufeli et al, 2002). Schaufeli et al. (2002) have subsequently proposed an amended conceptualization of work engagement, measured by a distinct scale. This definition and scale were adopted in the present study. Specifically, Schaufeli and Bakker (2003, p. 4) defined work engagement as:

“...a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption. Rather than a momentary and specific state, engagement refers to a more persistent and pervasive affective-cognitive state that is not focused on any particular object, event, individual, or behavior” (Schaufeli & Bakker, 2003, p. 4).

In other words, work engagement refers to being energetic and fully dedicated to one’s work (Hallberg & Schaufeli, 2006). Work engagement has also been linked with a number of work outcomes. For example, work engagement has a negative relationship with turnover intention. Specifically, work engagement seems to facilitate employee retention (Hallberg & Schaufeli, 2006; Schaufeli & Bakker, 2004). In addition, higher levels of work engagement have been found to be predictors of a “healthy service climate”, organizational

citizenship behaviors, organizational serving behaviors and high employee performance (Bakker et al., 2004; Salanova, Agut, & Peiro, 2005).

Engagement is defined as a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption (Schaufeli & Bakker, 2004; Schaufeli et al., 2002).

2.2.1 Vigor

Vigor is characterized by high levels of energy and mental resilience while working, the willingness to invest effort in one's work, and persistence even in the face of difficulties. (Schaufeli et al., 2002)

2.2.2 Dedication

Dedication, which refers to a strong involvement in one's work, accompanied by feelings of enthusiasm and significance and by a sense of pride and inspiration and are willing to completely focus on the task at hand (Schaufeli et al., 2002).

2.2.3 Absorption

Absorption, is characterized by being fully concentrated and deeply engrossed in one's work, whereby time passes quickly and one has difficulties with detaching oneself from work (Bakker, Demerouti, Hakanen & Xanthopoulou, 2007). Being fully absorbed in one's work comes close to what has been called 'flow', a state of optimal experience that is characterized by focused attention, clear mind, mind and body unison, effortless

concentration, complete control, loss of self-consciousness, distortion of time, and intrinsic enjoyment (Csikszentmihalyi, 1990 as cited by Schaufeli et. al., 2002).

2.3 Antecedents of Work Engagement

In recent years, more studies have begun to look at the antecedents and consequences of work engagement. For example, Saks (2006) found a distinction between two types of engagement, job engagement and organization engagement, which he argues are related but distinct constructs. In addition, he argued that the relationships between both job and organization engagement, and their antecedents and consequences differed in a number of ways, suggesting that the psychological conditions that lead to job and organization engagement, as well as their consequences, are not the same. Whilst this study has provided a new insight into work engagement, it is important to note the survey was completed by a small sample of 102 employees in Canada. Therefore, the results may not be generalized to employees in the UK, for example, as definitions of engagement vary in different countries and national differences may play a part in what leads to engagement in the first place. Nevertheless, it adds a new insight into the existing body of literature as it is the first study to make a distinction between job and organization engagement and to measure a variety of antecedents and consequences of job and organization engagement.

Schaufeli and Bakker (2004) cited that engagement is exclusively predicted by available job resources and negatively correlated by job demands. Koyuncu, Burke and Fiksenbaum (2006) cited that work experiences, rewards and recognition and the fit between personal and organizational values were found to be strong predictors of all three dimensions of engagement namely vigor, dedication and absorption. Saks (2006) concluded that perceived organization support (POS), job characteristics and procedural justice

predicted work engagement. Chughtai (2008) noted that the positive relationship between work engagement would be stronger if an individual's propensity to trust is high. Goal setting was also found to be positively predicted work engagement (Medlin & Green, 2008). Higher work demands and high control were associated with higher engagement in a study by Demerouti et al. (2001).

2.3.1 Job Demands-Resources Model (JD-R)

According to conservation of resources (COR) theory (Hobfoll, 1989), people strive to retain, protect and build resources and that what is threatening to them is the potential or actual loss of these value resources. The theory proposes that stress experienced by individuals can be understood in relation to potential or actual loss of resources. Bakker and Demerouti (2008) suggests that job resources become more salient and gain their motivational potential when employees are confronted with high job demands (e.g. quantitative demand, emotional demands, and cognitive demands) because they can help goal accomplishment.

According to Chughtai and Buckley (2008) work engagement has been mostly analyzed within the framework of the job demands-resources model. The basic premise of this model is that employees may work in different work environments but the characteristics of these work environments can be classified into two broad categories job demands; and job resources (Demerouti, Bakker, Nachreiner & Schaufeli, 2001; Bakker & Demerouti, 2007). The job demands-resources model is basically based on two main propositions (Bakker & Demerouti, 2007). The first proposition of this model states that burnout and engagement may be notably influenced by job demands and job resources (Demerouti, Bakker, Nachreiner & Schaufeli, 2001; Bakker & Demerouti, 2007). The

second proposition of this model suggests that job demands and job resources bring forth two psychological processes, which result in the development of burnout and engagement (Chugthai & Buckley, 2008)

More recently, Xanthopoulou, Bakker, Demerouti and Schaufeli (2007) have expanded the job demands resources model by incorporating personal resources into the model. They found that three personal resources, namely, self efficacy, organization based self esteem and optimism were significantly related to work engagement. Chugthai and Buckley (2008) conclude that the results of the structural equation modeling showed that as hypothesized, personal resources partially mediated the effects of job resources (autonomy, social support and opportunities for professional development) on work engagement suggesting that job resources promote the development of personal resources which in turn augment employees' work engagement.

2.3.2 Job Demand

Love et. al (2007) defined job demand as psychological stress such as having limited time to do work, working intensively for very long period or having conflicting demands. Bakker et. al (2003) cited that job demands represent the job characteristic that can evoke strain, in case they exceed employee's adaptive capabilities. John and Flectcher (1996) as cited by Schaufeli & Bakker (2004), defined demand as the degree to which environment contain stimuli that peremptorily require attention and response. More specifically, job demands refer to physical, social, or organizational aspects of the job that require sustained physical and psychological effort on the part of the employee and are therefore associated with certain physiological and/or psychological costs (e.g. exhaustion) (Bakker et. al. ,2007).

In this study job demand consist of emotional demand, cognitive demand and quantitative demand as proposed by Bakker et al (2003). Rothmann and Joubert (2007) and May, Gilson and Harter (2004) classified job demand into three dimensional items as physical or quantitative, emotional and cognitive. According to May et al. (2004), individual bring their physical or quantitative, emotional and cognitive resources to bear on role related task when they engage themselves at work.

Quantitative demand refers to the ability of individuals to meet the demands physically based on their strength , stamina and flexibility (May et.al., 2004). Emotional demands of jobs also vary in types and scopes for example teacher, may face emotional demand during interactions with students. May et. al. (2004) cited that frequency of emotional display, duration and intensity of such displays and variety of expressed emotions also decrease emotional resources.

As per emotional demand, cognitive demand also vary by job and person, respectively. However May et. al. (2004) cited that researchers have explored the 'need for cognition' that some people have for complex task, example some roles require more information processing than individuals can handle.

2.3.3 Job Resources

According to Bakker et al.(2003), job resources, are considered to be the physical, psychological, social, or organizational aspects of the job that reduce job demands and the associated costs, functional in achieving work goals; or help stimulate personal growth, learning and development. Bakker and Demerouti (2008) cited that job resources are assumed to play either an intrinsic motivational role because they foster employees' growth,

learning and development, or an extrinsic motivational role because they are instrumental in achieving work goals. Bakker et al (2003) also cited that at a work level, job resources may arise through the organization of the work (e.g. role clarity, participation in decision making), or the level of the task (e.g. skill variety, task identify, task significance, autonomy, performance feedback). Bakker and Demerouti (2008) identified that job resources such as social support from colleagues and supervisors, performance feedback, skill variety, autonomy, and learning opportunities are positively associated with work engagement. While according to Bakker and Demerouti (2007), job resources may be located at the level of the organization at large (e.g. pay, career opportunities, job security), the interpersonal and social relations (e.g. supervisor and co-worker support, team climate), the organization of work (e.g. role clarity, participation in decision making), and at the level of the task (e.g. skill variety, task identity, task significance, autonomy, performance feedback).

In this study, based on past literature (Bakker & Demorouti, 2007, 2008) job autonomy, perceived organizational support, perceived supervisor support and organizational justice (distributive and procedural) were selected as job resources dimension.

2.3.3.1 Job Autonomy

More job autonomy is expected to be associated with greater job satisfaction because workers have more freedom to determine their own effort and work schedule. Job autonomy is the most widely studied component of the job scope that reflects the degree to which a job provide substantial freedom, independent and discretion to an individual both in scheduling the work and determining the procedure to be use in carrying it out (Hackman &

Oldham, 1975). Saks (2006) categorized autonomy as a part of job characteristic that provide individuals with the room and incentive to bring more of themselves into their work or to be more engaged. He also concluded that autonomy as a part of job enrichment was positively related to meaningfulness and mediated the relationship between job enrichment and engagement. Previous studies (Bakker & Demerouti, 2007; Schaufeli & Salanova, 2007) have consistently shown that job resources such as social support from colleagues and supervisors, performance feedback, skill variety, autonomy, and learning opportunities are positively associated with work engagement

2.3.3.2 Perceived Organizational and Supervisor support

Eisenberger et al., (1986) concluded that according to organizational support theory, the development of perceived organizational support (POS) is encouraged by employees' tendency to assign the organization humanlike characteristics. In particular, POS creates an obligation on the part of employees to care about the organization's welfare and to help the organization reach its objectives (Rhoades et al., 2001). Although POS has been found to be related to a number of favorable outcomes (e.g. job satisfaction, organizational commitment, performance) (Rhoades and Eisenberger, 2002), no previous study has related it to employee engagement.

Kahn (1990) found that supportive and trusting interpersonal relationships as well as supportive management promoted psychological safety. Supportive environments allow members to experiment and to try new things and even fail without fear of the consequences (Kahn, 1990). Saks (2006) also found that perceived supervisor support (PSS) is also likely to be an important predictor of work engagement. Bakker et al. (2006), in their study among

Finnish teachers found particularly supervisor support, innovativeness, appreciation, and organizational climate were important job resources for teachers that helped them cope with demanding interactions with students.

2.3.3.3 Organizational Justice (Distributive and Procedural justice)

When the term justice is used, it generally refers to an individual's perceptual evaluations as to the appropriateness of a given outcome or process (Aryee, Budhwar & Chen, 2002). According to Greenberg (1987), there are two sources of organizational justice, procedural and distributive justice.

According to Rhoades et al (2001), distributive justice is pertaining to ones perceptions of fairness of decision outcomes while procedural justice refers to perceived fairness of the means and process used to determine the amount of distribution resources. Saks (2006) found that procedural justice predicted work engagement but distributive justice did not.

2.4 Consequences of Work Engagement

Saks (2006) cited that engagement is an individual-level construct and if it does lead to business results, it must first impact individual-level outcomes. Along these lines, there is reason to expect work engagement to be related to individuals' attitudes, intentions, and behaviors. Maslach et. al. (2001) concluded that it is important to study work engagement because it is linked to positive individual and work related outcomes. Koyunchu et. al. (2006) examined the predictors and consequences of work engagement in a sample of women managers and professionals working in a large Turkish bank. According to Koyunchu et al. (2006) engagement resulted in various work outcomes (job satisfaction and

intention to quit). Likewise engagement particularly one dimension of work engagement namely vigor, predicted various psychological well-being outcomes.

Practitioners and academics tend to agree that the consequences of work engagement are positive (Saks 2006). Saks (2006) also found that work engagement explained significant and unique variance in job satisfaction, organizational commitment, intention to quit and organizational citizenship behavior (OCB). Nowack (2006) in his study provided support for the hypothesis that work engagement can have a significant impact on perceptions of stress, overall job satisfaction and retention. Medlin and Green (2008) in their recent study, discovered that work engagement positively predicts workplace optimism. Saks (2006) found that job and organization engagement mediated the relationships between the antecedent variables comprising job demands and job resources with work related outcomes in the form of job satisfaction, organizational commitment, intentions to quit, and organizational citizenship behavior.

Given that work related outcomes have a strong impact on organization (like profitability, productivity) the researcher would like to focus on. Based on the past literature (Saks, 2006 & Koyunchu et al., 2006) career satisfaction, turnover intention, organizational commitment and task performance were selected as the consequences of work engagement for this research.

2.5 Theoretical Framework

A theoretical framework is constructed based on past literature. This study attempts to test a model of the antecedents and consequences of work engagement using the job demand - resources (JD-R) model adopted from Bakker and Demerouti (2007) and Bakker et. al. (2007).

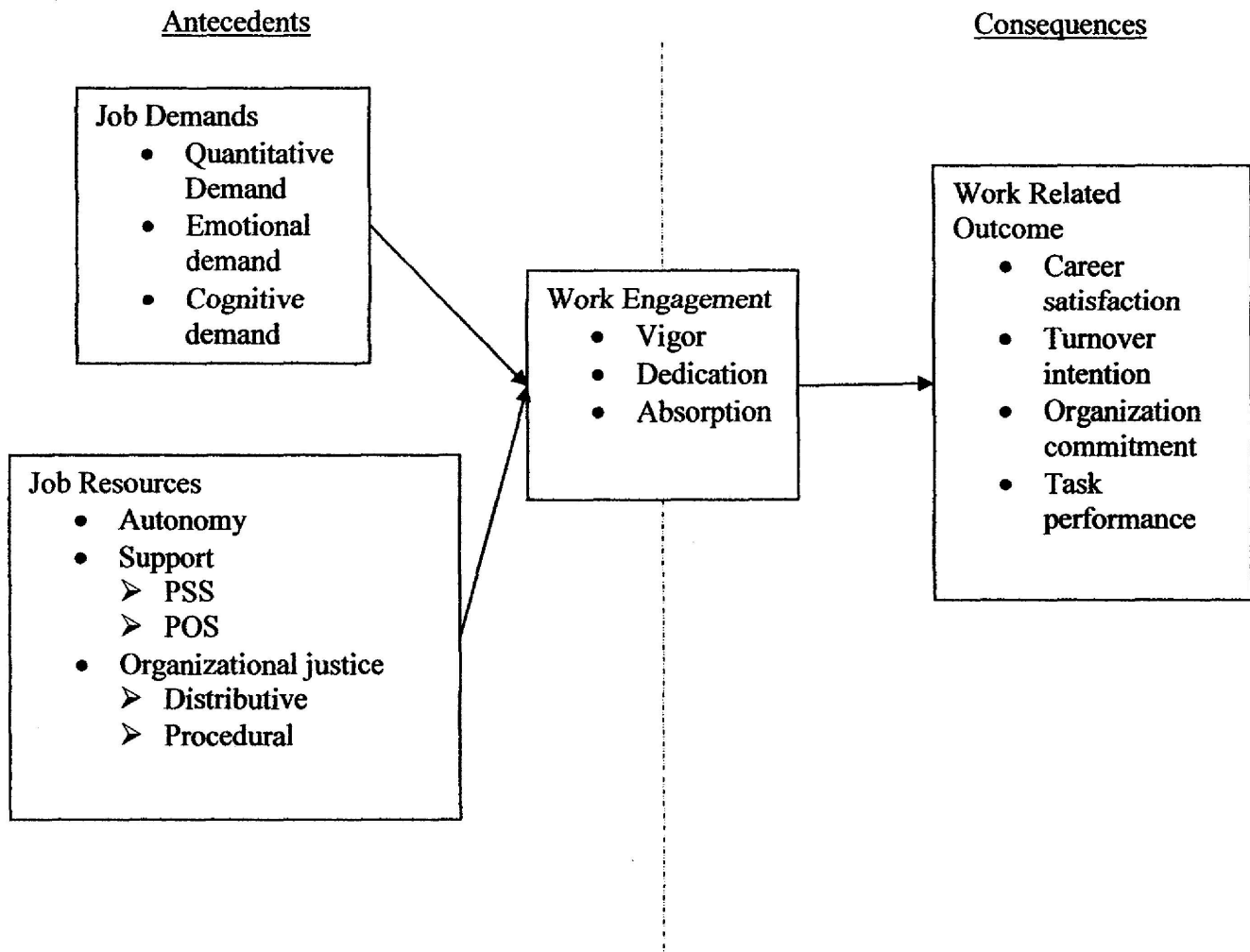


Figure 2.1. Conceptual Framework

2.6 Hypotheses

Based on the theoretical framework developed in Figure 2.1, three main hypotheses were developed for this study.

2.6.1 Job Demands and Work Engagement

As discussed in the literature review in subsection 2.3.1, job demand will reduce work engagement therefore there is a negative relationship between job demand and work engagement. Hence the first main hypothesis and its sub hypothesis are as follows:

H1: Job demand (quantitative demand, emotional demand and cognitive demand) is negatively related to work engagement (vigor, dedication and absorption)

H1.1a: Quantitative Demand is negatively related to vigor.

H1.1b: Quantitative Demand is negatively related to dedication.

H1.1c: Quantitative Demand is negatively related to absorption.

H1.2a: Emotional demand is negatively related to vigor.

H1.2b: Emotional demand is negatively related to dedication.

H1.2c: Emotional demand is negatively related to absorption.

H1.3a: Cognitive demand is negatively related to vigor.

H1.3b: Cognitive demand is negatively related to dedication.

H1.3c: Cognitive demand is negatively related to absorption.

2.6.2 Job Resources and Work Engagement

Bakker & Demerouti (2006) argued that job resources may instigate a motivational process leading to work engagement. In the second process proposed by the JD-R model, job

resources lead to engagement and positive outcomes (Schaufeli & Bakker, 2004). As discussed in the literature review in subsection 2.3.3, job resources will increase the level of work engagement therefore there is a positive relationship between job resources and work engagement. Hence the second hypothesis and its sub hypothesis are as follows:

H2: Job Resources (job autonomy, perceived organizational support(POS), perceived supervisor support(PSS), organizational distributive and procedural justice) is positively related to work engagement (vigor, dedication and absorption.)

H2.1a: Job Autonomy is positively related to vigor.

H2.1b: Job Autonomy is positively related to dedication.

H2.1b: Job Autonomy is positively related to absorption.

H2.2a: Perceived supervisor support(PSS) is positively related to vigor.

H2.2b: Perceived supervisor support(PSS) is positively related to dedication.

H2.2c: Perceived supervisor support(PSS) is positively related to absorption.

H2.3a: Perceived organizational support (POS) is positively related to vigor.

H2.3b: Perceived organizational support (POS) is positively related to dedication.

H2.3c: Perceived organizational support (POS) is positively related to absorption.

H2.4a: Distributive justice is positively related to vigor.

H2.4b: Distributive justice is positively related to dedication.

H2.4c: Distributive justice is positively related to absorption.

H2.5a: Procedural justice is positively related to vigor.

H2.5b: Procedural justice is positively related to dedication.

H2.5c: Procedural justice is positively related to absorption.

2.6.3 Work Engagement and Consequences of Work Engagement

Several studies (Bakker et. al.,2007, Saks, 2006, Koyunch et. al., 2007) have indicated that work engagement has positive consequences at the individual and organizational levels. According to Harter et al.(2002), engagement is related to meaningful business outcomes at a magnitude that is important to many organizations. As discussed in the literature review in subsection 2.4, engaged workers are energetic, are positively connected to their work and feel they are doing their jobs effectively. Therefore the third hypothesis will be :

H3: Work engagement (vigor, dedication and absorption) is positively related to work engagement outcome (career satisfaction, organization commitment, task performance) and negatively related to turnover intention.

H3.1a: Vigor is positively related to career satisfaction.

H3.1b: Vigor is negatively related to turnover intention.

H3.1c: Vigor is positively related to organization commitment.

H3.1d: Vigor is positively related to task performance.

H3.2a: Dedication is positively related to career satisfaction.

H3.2b: Dedication is negatively related to turnover intention.

H3.2c: Dedication is positively related to organization commitment.

H3.2d: Dedication is positively related to task performance

H3.3a: Absorption is positively related to career satisfaction.

H3.3b: Absorption is negatively related to turnover intention.

H3.3c: Absorption is positively related to organization commitment.

H3.3d: Absorption is positively related to task performance

Chapter 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research design and methodology that have been utilized in this research up to the data analysis procedures. This chapter covers a series of steps, including outlines of the theoretical framework, hypothesis development, population and sampling, data collection methods, operational of variables and data analysis procedures.

3.2 Research Design

Research design is suitable for a study that aims to analyze a phenomenon, situation, problem, attitude or issue by considering a cross-section of the population at one point in time (Kumar, 1996). Therefore, this study was quantitative in nature using a questionnaire as a main research instrument. In line with this, the study was designed to identify the relationships among independent variables and dependent variables.

3.2.1 The Sample

This study involved engineers in the electronics manufacturing firms within the electronics and electrical sector located in the state of Penang. Penang has a numerous number of firms that are involved in various types of manufacturing sector. According to Invest Penang (<http://www.investpenang.gov.my> retrieved, 31st Jan 2009, 2.41pm), there are 188 electrical and electronics manufacturing firms located in Penang. From these 188 companies, only 48 manufacturing firms that having more than 500 employees. According to Crain and Hopkins (2001), a large firm is defined that having more than 500 employees. In this study,

20 electrical and electronics large firms were randomly selected from the total of 48 large companies.

Table 3.1
Number of Electrical and Electronics Firms and Respondent Selected.

Electrical and Electronics Manufacturing Firms	Number of Engineers	Number of Respondents Identified
1	175	25
2	280	41
3	150	22
4	195	28
5	180	26
6	50	7
7	180	26
8	85	12
9	300	44
10	80	12
11	40	6
12	60	9
13	120	17
14	55	8
15	65	9
16	250	36
17	80	12
18	75	11
19	150	22
20	180	26
Total	2750	400

3.2.2 The Sampling Method and Procedure

A two stage of sampling technique was employed in the selection of respondents. First the sampling involved selecting the electrical and electronics factories. A total of 20 electrical and electronics firms in Penang were selected randomly. These 20 companies were contacted through their respective human resources department to obtain the information on the number of engineers and for questionnaires distribution. Secondly, a total of 400 sets of

questionnaires were distributed to those firms in proportion to the number of engineers in the firms. The distribution of questionnaires is shown in Table 3.1. The formula used in calculating the number of respondents for each participating firm is as follows:

$$\left[\frac{\text{Number of Engineers}}{\text{Total number of engineers for the 20 firms}} \right] \times 400$$

3.3. Variables and Measurement

The items measures for the study variable were taken from published literatures. They are discussed in this section (Section 3.3.1). Table 3.2 shows the summary of the questionnaires used for this study.

3.3.1 Antecedents Variables Work Engagement

A total of eighteen items were used in the measurement of job demands. Job demands comprised of three dimensions quantitative demand (5 items), emotional demand (4 items) and cognitive demand (9 items). This instrument was developed by Kristensen, Hannerz, Hogh and Borg (2005) known as Copenhagen Psychosocial Questionnaire (COPSOQ). These items were rated using a 5-point Likert scale ranging from "Never" (1) to "Always" (5). The five items measurement for autonomy a form of job resources was adopted from Voydanoff (2004). The response was also based on a 5-point Likert scale ranging from (1) "Never" to (5) "All the time". Perceived organization support (POS) was measured using six positively worded items adopted from Rhoades, Eisenberger and Armeli (2001). Perceived supervisor support (PSS) was measured using six items adapted from the measure off perceived organization support (POS) taken from Rhoades et. al. (2001). In this study the term "organization" was substituted with the term "supervisor". A 5-point Likert scale